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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,936	10/27/2003	Sunao Tanaka	788_119	5094

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BURR & BROWN
PO BOX 7068
SYRACUSE, NY 13261-7068

EXAMINER

JOHNSON, JONATHAN J

ART UNIT PAPER NUMBER

1725

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,936

Applicant(s)

TANAKA ET AL.

Examiner

Jonathan Johnson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10-27-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It was not executed in accordance with either 37 CFR 1.66 or 1.68.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Sunao et al. (JP 2003-094174). Sunao et al. teach butting together the two planar members so as to form a joint region therebetween (figure 6, items 2a and 2b); and a friction stir welding operation wherein a rotary tool having a shoulder surface at a bottom end thereof and a probe coaxially provided on the shoulder surface is moved relative to said two planar members such that said probe is rotated with said rotary tool and inserted in said joint region (figure 4, item 6), said method comprising the steps of: preparing a tab plate having a cutout formed in an end face thereof (figure 6, items 30 and 32), such that said cutout has a width which is not smaller than a radius of a peripheral circle to be described by a periphery of said shoulder surface of said rotary tool during rotation of the rotary tool (paragraph 53-60 of translation), and a depth which is not smaller than a

minimum radius of said probe and not larger than the radius of said peripheral circle of said shoulder surface, said width being measured in a direction parallel to said end face and a direction in which said two planar members are butted together, while said depth being measured in a direction perpendicular to the direction of said width; positioning said tab plate relative to said two planar members such that said end face is held in abutting contact with end faces of said two planar members which correspond to a terminal portion of said joint region at which said friction stir welding operation is to be terminated, and such that one of opposite ends of said width is located on one side of said joint region which corresponds to an upstream side as seen in a rotating direction of said rotary tool, as viewed at a leading end of said rotary tool in its direction of movement (paragraph 53-60 of translation), and further such that a distance between a terminal end of said terminal end portion of said joint region and said one end of said width is not smaller than zero and not larger than a maximum radius of said probe, while a distance between said terminal end and the other of said opposite ends of said width is not smaller than the radius of said peripheral circle; and initiating said friction stir welding operation after said tab plate is positioned relative to said two planar members, and terminating said friction stir welding operation after said rotary tool which has been moved to said terminal end of said joint region is further moved across said cutout to a position within an area of said tab plate (sections 53-60 of translation); wherein said friction stir welding operation is terminated after a trailing end of said rotary tool as viewed in its direction of movement has passed said end face of said tab plate (sections 53-60 of translation); thickness of said tab plate as held in abutting contact with said end faces of said two planar members is determined such that an upper surface of said tab plate is located between a first position and a second position which are respectively located below and

above upper surfaces of said two planar members, by a distance close to 30% of a thickness of said two planar members (paragraph 20); wherein a thickness of said tab plate as held abutting contact with said end faces of said two planar members is the same as the thickness of said two planar members (paragraph 60); wherein said rotary tool includes a cylindrical body having a constant diameter over an entire axial length thereof and a circular shoulder surface at a bottom end thereof, and said probe in the form of a pin which is coaxially formed on said circular shoulder surface and having a constant diameter over a substantially entire axial length thereof, said width being not smaller than a radius of said cylindrical body, while said depth being not smaller than a radius of said pin and not larger than the radius of said cylindrical body, and wherein said distance between said terminal end of said terminal end portion of said joint region and said one end of said width is not larger than the radius of said pin, while said distance between said terminal end and said other end of said width is not smaller than the radius of said cylindrical body (paragraph 53-60 of translation), is removed from the joined two planar members after terminating said friction stir welding operation, by one of hand and a wooden hammer (paragraph 57); wherein said cutout has a rectangular shape in cross section taken in a plane parallel to the upper surface of the tab plate (figure 6, item 32); wherein said planar members are formed of a material selected from the group consisting of aluminum materials and aluminum alloy materials (paragraph 45).


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 571-272-1177. The examiner can normally be reached on M-Th 7:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jonathan Johnson
Examiner
Art Unit 1725